

Dear FCC, Use of the Internet in an unlimited manner has become extremely important to society, and by unlimited manner I mean in a way that allows the end-users to determine what applications and services are run on their system and that they have access to. If this were not the case, then we would not have companies like Google, or technologies like Linux, MySQL, PHP, or many others - technologies that in themselves are the core of the Internet and the core of what created the Internet.

Comcast's actions in resetting TCP connections that are thought to be part of a P2P network is one major example of an ISP acting in its interests not that of its customers - with whom it is not only providing contractual service, but also to whom it is providing access that is nearly without choice. In a free market economy customers would have a choice between multiple service providers. However, in today's world of ISPs customers are limited in their choices. For example, Cable companies typically have contracts with communities, counties, or other government organizations to be the sole provider of cable services - whether Internet, TV, or Phone or any new service that they might decide to offer. If customers want to have Cable service, then they must go with that company that was decided for them. They might have an option of using a Telco (e.g. Verizon, AT&T), however, that is only if the Telco provides similar services to where they live - which they may not. For example, AT&T might choose to not provide DSL service to customers that are within range for one grade of service (e.g. within 18k feet of a DSL Central Office) but not in range for their preferred level of service (e.g. within 15k feet of a DSL Central Office), thus leaving the customers in between out of an option. Furthermore, other Telco's might not offer DSL service at all in the same region, or may not be able to due to sub-leasing services from another provider that chooses not to offer service there.

By the way, I have been in that situation. A few years back I lived in Fairfax, VA. I was within the 18k range for DSL, but the local provider (Verizon) didn't want to provide service because I was not with the 15k range for their preferred level of service. Other competitors (e.g. SpeakEasy) licensed service for that area from Verizon and thus couldn't provide service to me either. My only choice for high speed Internet was Cox Communications, or going to 56k modem access, which is

not an option for me given my career as a software developer and user of Linux and other open source technologies. For example, it would take days for me to download a CD-ROM ISO image from a Linux distributor over dial-up.

While I understand Comcast's desire to limit traffic to provide better service for everyone, they are at the same time causing problems for their customers. As I explained above, their customers may not have another choice of an ISP, and what their customers are doing may in fact be legitimate Internet use, not Copyright Infringement activity. For example, many Linux Distributors (e.g. Gentoo, Slackware) have moved to using BitTorrent to deliver CD and DVD ISO images of their Linux Distributions; Comcast's actions therefore limit their customers from their choice of Computer Operating System software - a legitimate choice, and fully legal usage of the Internet access. Or, for example, a musician may choose to give some of their music away as MP3s on a popular P2P network for people to find and gain interest in to create a market for their music. (By the way, I am considering doing just this with some of my own compositions and performances.) Again, this is a fully legitimate and legal for said musician to do, yet Comcast's actions are both denying that musician the ability to do so, and denying others on the Internet access to that musician. Thus, Comcasts actions are not in the Interest of the people of the United States of America, nor are they in the interest of the U.S. Economy.

Furthermore, Comcast's actions may result in limiting new start-ups from coming into existence. If Comcast is allowed to discriminate against one kind of traffic, e.g. BitTorrent and P2P, then will essentially have been given free reign to limit traffic of other kinds too. For instance, a new company forms an Internet offering that uses TCP port 1641, and has their customers connect to that port. If Comcast doesn't like how traffic to that company is affecting Comcast's network, then Comcast may decide to limit access to that port, thus affecting the start-up - possibly even preventing it from gaining the audience it needs to succeed. Comcasts's customers would not know why, nor would they necessarily have any recourse to resolve it if they did. Thus allowing Comcast to do what it has done with BitTorrent may keep us from the next Google.

Regardless of what Comcast actually says to you - they are primarily acting in their own interests. To my understanding, many ISPs have oversold the bandwidth they provide, hedging their bets that they will have enough bandwidth at any given time for the number of customers actually using it. However, new technologies such as BitTorrent and P2P have changed that game, so they are trying to minimize how much they need to pay in order to give customers what they are actually paying for.

For example, if a customer purchases a 5 Mbps connection, they should be allowed to peak that connection for the entire duration of their usage. However, Comcast has come out as saying that they have a 200Gbit/month limitation. Here's the math:

$$5 \text{ Mbit/second} * 60 \text{ second/minute} * 60 \text{ minutes/ hour} * 24 \text{ hours/day} * 365.25 \text{ days/ year} * 1 \text{ year} / 12 \text{ months} = 13,149,000 \text{ Mbits/month.}$$
$$13,149,000 \text{ Mbits/month} = 13,149 \text{ Gbits/month.}$$

Comcast's limit of 200 Gb/month results in a difference of 12,949 Gbits/month - or providing 1.521% of the data transfer the customer has contracted for. They have put in that limit because they cannot actually honor their contract to all the customers they have contracted with. Yet we are to accept that we are only going to get 1.5% of what we are paying for? (Note, even if they are meaning Gigabytes per month - that's just a factor of 8. 13,149 Gbits/month equals 1,643.625 Gigabytes/month as there are 8 bits in a standard byte - and it is still a delivery of only 12.17% of the data transfer the customer has contracted for; not as bad as 1.521%, but still not what customers expect or believe they have contracted for.)

While it may not seem like it on the surface, this issue really has to do with ISPs not expanding their networks to provide the service levels they are contractually obligating themselves to - even if they have worked in parts of the "small print" to do so legally. We should not let them get away with simply changing what customers can do simply to better their bottom line, but rather work to help them build out their infrastructure to provide what customers expect and what customers believe they are paying for, which is the intent of the regulations - to ensure customers are getting what they expect and believe they are getting, and that companies are adequately providing against those

expectations, and that the contracts are fair and just.

To bring it back to Docket #07-52, Comcast's actions with respect to BitTorrent are simply the bandaide over a much more broken and unhealthy system. The United States is already far behind Asia and Europe with the amount of bandwidth provided to home users (e.g. 100Mbps in Asia and Europe versus 5, 10, or 15 Mbps in the United States). The problem is infrastructure and companies such as Comcast not willing to invest in it, but yet wanting to charge high fees in monopolized areas where customers have little recourse or choice to provide below adequate services, and then to additionally deny customers the right to use their bandwidth as they see fit - whether BitTorrent, P2P, Web Traffic, Video Streaming, or the next big thing - in order to minimize their costs.

What's going to happen when DOCSIS 3 is more common place and cable modems are using multiple frequencies instead of one? Is Comcast going to decide to limit other kinds of traffic so it can further reduce costs of infrastructure upgrades while further expanding its customer base?

Sincerely,

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